VITEK

VITEK®
INDUSTRIAL VIDEO PRODUCTS, INC.

VTC-C770WS

Pixim Powered Ultra Dynamic Range
Color CCD Camera with 700 TVL
Short Body

(Lens not included)

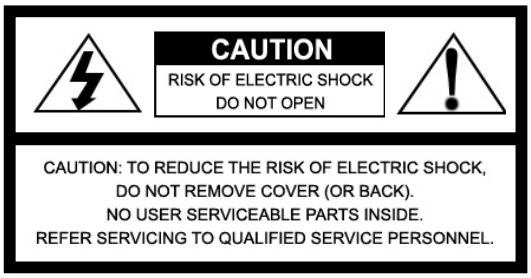
- 700 TVL High Resolution
- Pixim D8800C Seawolf Digital Imaging System CMOS
- 0.00008 Lux (F1.2@40IRE using sense-up)
- Designed to fit in Pelco DF5 Housing
- Supports C/CS Mount DC Drive Lenses
- Supports NTSC & PAL Standards
- On Screen Display (OSD) w/optional remote
- 12VDC / 24VAC Dual Voltage Operation

CYAN MAGENTA YELLOW BLACK

WARNING To prevent fire or shock hazard, do not expose the unit to rain or moisture.

The symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the unit.

The symbol is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to the person.


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

Caution

To prevent electric shocks and risk of fire hazards, do NOT use anything other than specified power source.

Warning (NTSC version) -- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Caution -- Any changes or modifications in construction of this device that are not expressly approved by the party responsible for compliance, could void the user's authority to operate the equipment.

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1. Safety Instructions and Notes

- Read instructions carefully before putting the camera into operation.
- Keep the operating instructions in a safe place for later use.
- The Standard Box Camera is designed for indoor use only and it must not be installed where exposed to rain and moisture.
- Do not operate the cameras beyond their specified temperature, humidity or power ratings.
- Never open the case of the camera because there are precision parts inside. An accident may result
- Do not put anything metallic or foreign through the vent. A fire or electric shock may result.
- Be sure to turn off the power before installing or making connection.
- Pay attention when laying the connection cable and observe that the cable is not subject to heavy loads, kinks or damage and that no moisture can get in.
- Do not install the camera in places exposed to vibrations and shocks.
- Be very careful not to drop or shock the camera while carrying it.
- Do not angle the camera to the sun.
- Do not make any modification to the unit (neither to the software nor the hardware). Improper modification voids the warranty and can cause malfunctions or damages.
  The manufacturer accepts no liability for damages resulting from unauthorized or improper modifications to the unit
- Some types of lenses may cause hunting, light amount drop or other problems. In such case, readjust the lenses.
- Because of the digital image device characteristics, images may look rugged at high temperatures. This does not mean the camera is malfunctioning.
- The warranty becomes void if repairs are undertaken by unauthorized persons.
- Contact the supplier if any functional problems arise.

Cleaning:

- Do not touch the surface of the imaging device.
- Keep front and rear lens surfaces clean.

Notice -- The images used in this manual are processed to help comprehension and may differ from actual video of the camera.

2. General Descriptions

The VTC-C770WS camera is a superb ultra dynamic range camera that achieves 120dB max (102dB typical) of dynamic range of the image by implementing PIXIM's Seawolf digital imaging system.

Seawolf digital imaging system:
- Delivers high-resolution, crystal clear images that accurately capture every aspect of any scene
- Offers the highest resolution of 700TVL (horizontal)
- Ultra-wide dynamic range imaging accurately captures all of the critical details in a scene including highlights, shadows and everything in between without compromising image quality or color accuracy
- Enhanced low-light performance makes Seawolf the natural choice for both indoor and outdoor cameras for all lighting conditions.

ICR mechanism:
- Enhances its sensitivity about 10x at night
- Accepts infrared light

24VAC/12VDC dual power design:
- Offers flexibility of installation
- Ensures reliability

Features:
- 1/3" CMY Color DPS SENSOR (Pixim Seawolf D8800C series)
- Resolution of 700 Horizontal TV Lines
- 10x sensitivity enhancement by removing the optical filter
- Switches to B/W and able to accept infrared spectrum at night mode
- Enhanced sharpness compensation
- Very low noise and superior picture quality
- 0.0008Lux Class sensitivity (0.002Lux@ 2x Sense-up)
- Automatically removable IR Cut Filter
- Automatic White Balance (ATW)
- Support DC auto iris lens
- Supply voltage: 24VAC/12VDC Dual voltage

VTC-C770WS - Mini UDR Color Camera

Compact design to fit in Pelco DF5 Housing

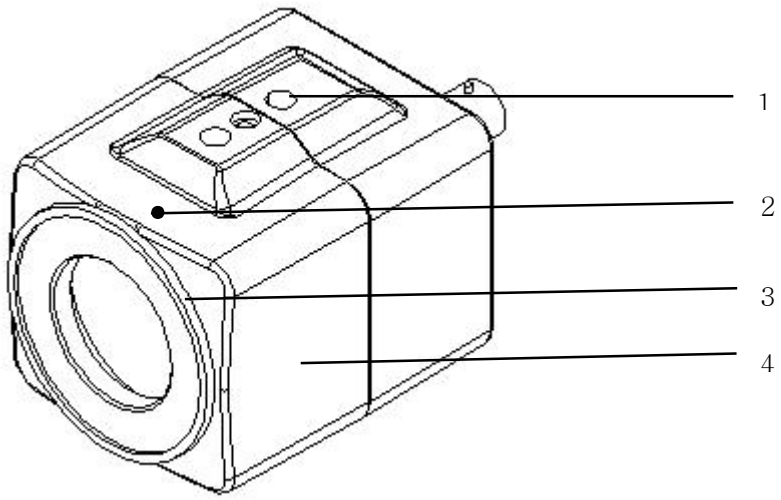
Optional Remote OSD Controller - VT-UTCC

3. Supplied Items

1 x VTC-C770WS Ultra Dynamic Color Camera
1 x Dust protection cap
1 x L-Wrench (1.5mm)
1 x Power Connector
1 x Installation and Operating Instructions

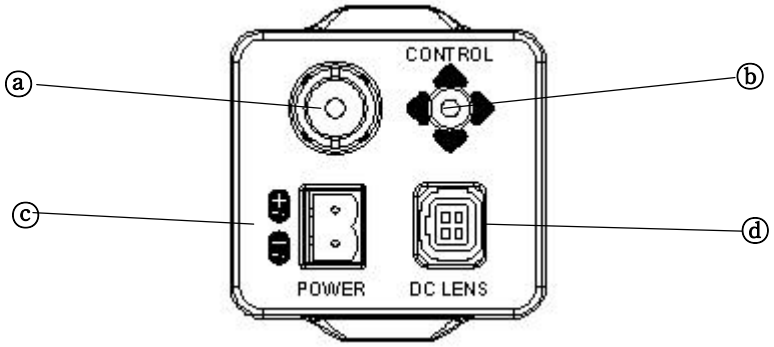
3. Part Names

3.1 Perspective



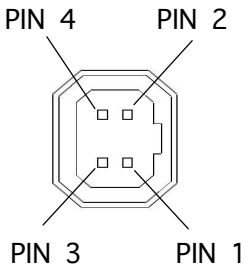
1. Mount Hole (1/4” UNC)
2. Flange Lock Screw
3. Back Focus Adjusting Flange
4. Camera Body

3.2 Rear Side view



ⓐ Video Output Connector (BNC)
ⓑ OSD Control Joystick (Up/Down/Left/Right/Enter)
ⓒ Power Input Terminal
ⓓ AUTO IRIS LENS CONTROL (DC LENS ONLY)

- Lens Connector for Auto-iris lens (DC Drive)



PIN No	DC Iris
1	Damp(-)
2	Damp(+)
3	Drive(+)
4	GND

4. Installation procedure

4.1 Installing the lens

Before installing the lens, make sure the power is not connected to the camera.
Do not touch the lens or filter surfaces.

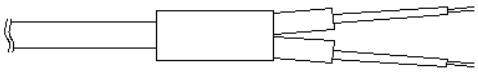
4.2 Adjust back-focus (If required)

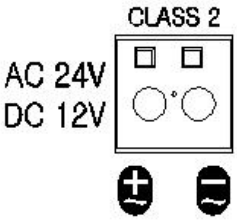
Adjust when the standard back-focus setting is not compatible with lens tolerance or when the camera is employed at a distance closer than the minimum object distance (MOD).

i. Loosen (2) FLANGE LOCK SCREW to adjust the back focus of lens
ii. Camera Focus can be adjusted by turning (3) BACK FOCUS ADJUSTING FLANGE
iii. After adjustment, lock (2) FLANGE LOCK SCREW

4.3 Power Supply Connections

The VTC-C770WS camera works with 24VAC or 12VDC, dual voltage power. It does NOT require matching polar connection for 12VDC supply. Primary and secondary grounds are completely isolated to avoid possible ground-loop problems. Its wide operating voltage range of 10.5V-30V for DC and 12-28.8V for AC gives extra flexibility during installation.





5. Start up

When the camera is powered properly, it initializes the internal parameters and the filter switch mechanism. The filter switch unit repeats IN and OUT at each power up and just after RESTORE FACTORY SETTINGS.

6. SETUP Menu

6.1 In the menu

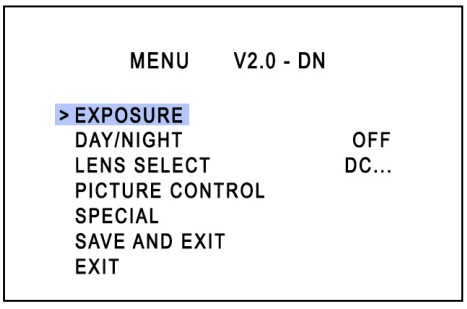
Use up and down buttons to move through the menu page, and side to side buttons to change the settings. Press the Circular button to select or enter.
◎ Button stands for MENU or ENTER.

6.2 Entering menu

Press ◎ button for 2+ seconds on the back of the camera.

6.3 MAIN

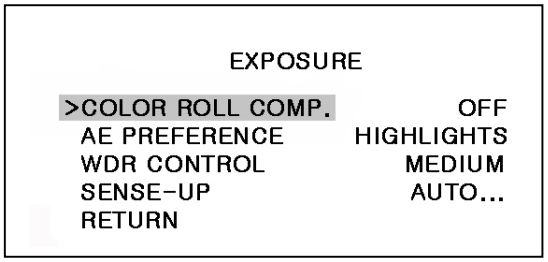
Follow the chart for submenu settings.



MENU	Default	Descriptions
EXPOSURE		Sets COLOR ROLL COMP. AE PREFERENCE, WDR CONTROL and SENSE-UP.
DAY/NIGHT	AUTO	Sets OFF, AUTO or NIGHT **OFF** – Day/Night is disabled and camera works as a normal color camera. **AUTO** – Camera switches DAY from/to NIGHT automatically. N->D THRES, N<->D DELAY, BURST ON B/W can be set. See DAY&NIGHT AUTO SETUP for detail. **NIGHT** – Forced to remove IR cut filter and switch to B/W.
LENS SELELT	DC	Selects the lens type, DC or MANUAL. **In sub-menu, Accurate Focus can be set by function of FOCUS ADJ…**
PICTURE CONTROL		Sets WHITE BALANCE, COLOR SELECT, SHARPNESS, SATURATION, GAMMA.
SPECIAL		Sets MOTION, PRIVACY MASK, 3D NR, D-EFFECT, SYNC, LANGUAGE, VIDEO STANDARD, RS485 CONTROL.
SAVE AND EXIT		Exits menu after saving the parameters.
EXIT		Exits menu with discarding any changes.

6.4 EXPOSURE

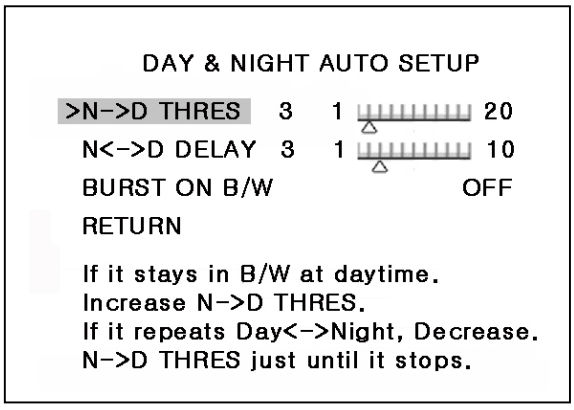
To enter EXPOSURE menu, press ◎ button at MAIN>EXPOSURE.



EXPOSURE	Default	Descriptions
COLOR ROLL COMP.	OFF	In NTSC system, the color tone on the monitor may show a red or green hue. **COLOR ROLL COMP.** - Reduces the color rolling under the fluorescent lighting. (NTSC system only) **OFF** – Does not compensate the color rolling. **MODE-M** - Compensates the color rolling when a manual lens is used. **MODE-A** - Compensates the color rolling when an auto iris lens is used.
AE PREFRENCE	HIGHLIGHTS	Sets HIGHLIGHTS or SHADOWS **HIGHLIGHTS** - Provides the best detail in bright areas. The darker aspects of the scene may under-expose. **SHADOWS** - Provides the best detail in dark areas. It will reduce the dynamic range and the brighter aspects may overexpose.
WDR CONTROL	MEDIUM	**LOW** - Produces an image that has better contrast but less dynamic range and is suitable for indoor or low-contrast outdoor scenes. **NORMAL** - Produces an image that has average contrast and is suitable for indoor or low-contrast outdoor scenes. **MEDIUM** - Produces an image that has better dynamic range and is suitable for a lobby or high-contrast outdoor scenes. **HIGH** - Produces an image that has superior dynamic range but less contrast and is suitable for high-contrast outdoor scenes. **CUSTOM** - Provides more flexible compensation by ZONE, RANGE and BIAS. When COLOR ROLLCOMP is set to MODE-A, WDR CONTROL will be fixed as LOW.
SENSE-UP	AUTO	If E-UP is set to AUTO, the maximum sense-up rate can be limio 2X-30FPS, 4X15FPS, 8X-18FPS, 16X-4FPS, 32X-2FPS or 64X-2FPS in SENSE-UP SETUP. **Thetion frames vary automatically within the max. rate according to the light level when light becomes low and DSS is operating**. The higher sense-up rate, the higher sensitivity but the slower refresh rate. Some white dots may appear by sense-u due to the image sensor's long accumulation by a long shutter period.

6.5 DAY/NIGHT

To enter DAY/NIGHT menu, press ◎ button at MAIN>DAY/NIGHT>AUTO.


DAY & NIGHT AUTO SETUP
>N->D THRES 3 1 20
N<->D DELAY 3 1 10
BURST ON B/W OFF
RETURN
If it stays in B/W at daytime.
Increase N->D THRES.
If it repeats Day<->Night, Decrease.
N->D THRES just until it stops.

IMPORTANT!!!

IMPORTANT!!!

DAY->NIGHT and NIGHT->DAY operations must be examined and verified at the final step of installation. Factory Settings have DAY/NIGHT set to OFF.

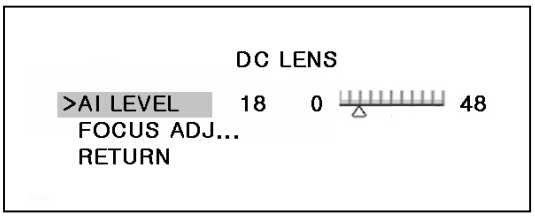
Block the lens for a few seconds for NIGHT mode, then release and let it return to DAY mode. If the camera stays at NIGHT mode more than 10 seconds, increase N-->D THRES and repeat the fore-mentioned steps.

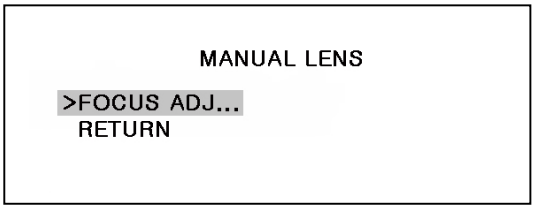
If the scene is too dim or the lens iris was adjusted too low (near close), it may not return to DAY.

DAY/NIGHT	Default	Descriptions
N-->D THRES.	3	**N-->D THRES** is a threshold level to switch from NIGHT to DAY. Due to the nature of WDR, the image level of the scene are controlled down and the camera would not switch to DAY even though the ambient is bright enough. Increase the value if it stays in B/W and is required to switch to DAY. Too high of a value may make the ICR repeat between NIGHT<-->DAY. In that case, reduce the value and execute the steps above.
N<-->D DELAY	3	**N<-->D DELAY** is the time, in seconds, when the camera maintains its status before D<-->N switches. DELAY can avoid the unwanted/frivolous switching caused by short term lighting changes, such as the light from a passing car.
BURST ON B/W	OFF	**BURST ON B/W** determines whether a color burst signal keeps output or eliminated when camera switches to B/W. If set to ON, B/W video signal contains color burst signal and is more compatible with the color equipment but shows the same resolution as color video. If set OFF, the color burst signal is removed from B/W video and shows better resolution. Rarely will a compatibility problem occur with the color equipment.

6.6 LENS SELECT

To enter LENS SELECT menu, press ◎button at MAIN>LENS SELECT>DC or MANUAL.

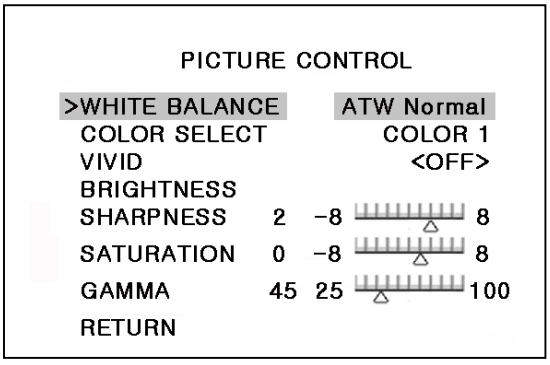




DC/ MANUAL	Default	Descriptions
AI LEVEL	24	Lower values open the lens iris and increases the brightness and vice versa. **Too high of a value reduces the amount of incoming light and may result in the camera not returning to DAY from NIGHT.**
FOCUS ADJ.	-	**FOCUS ADJUST helps the Accurate focus adjustment regardless of DAY or NIGHT.** Sometimes the focus looks fine tuned at day time but oocus at night time. This function can eliminate the wrong adjustment of

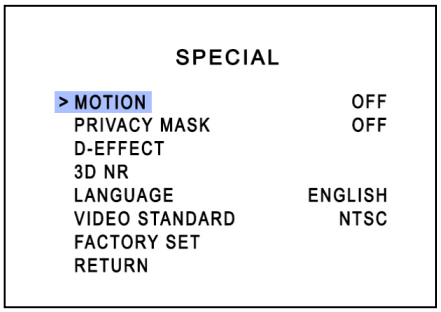
6.7 PICTURE CONTROL

To enter PICTURE CONTROL menu, press ◎ button at MAIN>PICTURE CONTROL.



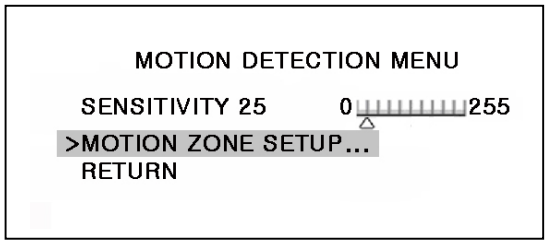
PICTURE CONTROL	Factory Default	Descriptions
WHITE BALANCE	ATW NORMAL	Sets ATW to Normal, ATW Desat, ATW Xtnd or MANUAL. **ATW NORMAL** - Compensates automatically in range of 2800K-7500K. **ATW DESAT** - Compensates automatically in range of 2000K-11000K. In the range of 2000-2800K and 7500-11000K, white balance is gradually compensated. **ATW Xtnd** - Compensates automatically in range of 2000K-11000K. **MANUAL** - White balance can be adjusted by either KELVIN or R/B
COLOR SELECT	COLOR1	Provides three color tones.
VIVID	OFF	Generates a vivid image with a little stronger color and contrast. If VIVID is set to ON, WDR preset changes to NORMAL.
BRIGHTNESS		BRIGHTNESS level is a kind of video output gain and is different from the iris level control. It can be set to MID-LOW, MIDDLE, MID-HIGH, HIGH and LOW. If it is set too high, the dynamic range is decreased.
SHARPNESS	2	Increase or decrease the sharpness of the picture. Too much sharpness can turn the image harsh and show noise.
SATURATION	1	A high value makes the color rich and vice versa.
GAMMA	45	Lower value improves the gain of the dark area but the image has less contrast. Higher value reduces the gain of the dark area and makes the image more dark and contrastive. The image will loose the linearity for too high value.

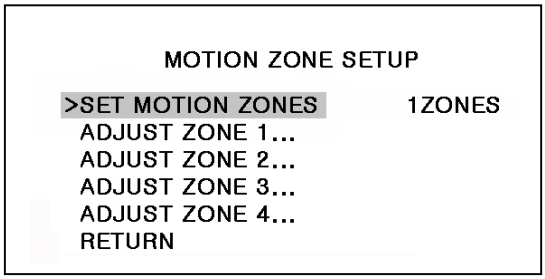
6.8 SPECIAL

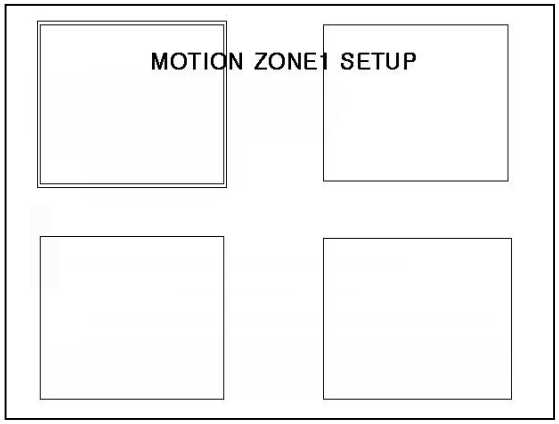


SPECIAL	Default	Descriptions
MOTION	OFF	If it is set to ON and motion is detected, MOTION message will appear on the monitor. See '6.8.1 MOTION ' for settings.
PRIVACY MASK	OFF	If set to ON, up to 6 privacy masks will be available. See '6.8.2 PRIVACY menu' for settings.
D-EFFECT		Sets FREEZE, FLIP, or D-PTZ.
LANGUAGE	ENGLISH	English only.
3D NR		Determines the depth of Three Dimensional Noise Reduction.
VIDEO STANDARD	NTSC	Able to switch between NTSC or PAL.
FACTORY SET		Sets previous setting.
RETURN		Returns to previous page.

6.8.1 MOTION

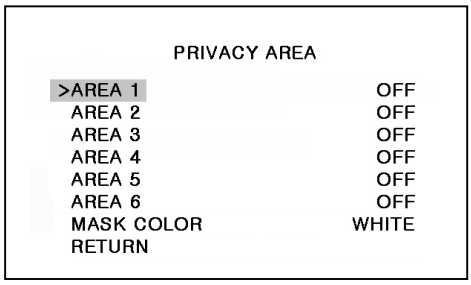






Up to 4 motion areas and the sensitivity can be set. The sensitivity is applied to all zones equally.
In adjusting each zone, the zone borderline changes color when pressing ◎ button.
Green enables enlarging, red enables reducing and white enables moving the zone.
To exit MOTION ZONE SETUP, press ◎ button for 2 seconds.

6.8.2 PRIVACY AREA



Up to 6 privacy areas can be programmed in size, position and mask color.
Use joystick to change size, position and mask color.

After pressing ◎ button at ON, the 1st zone appears on top-left corner in orange.
The orange colored zone can be relocated with 'up and down', and 'side to side' buttons.

After pressing ◎ button again, the 1st zone changes to blue.
The blue colored zone can be resized with 'up and down', and 'side to side' buttons.

Mask example after resizing.

Mask example after relocating.

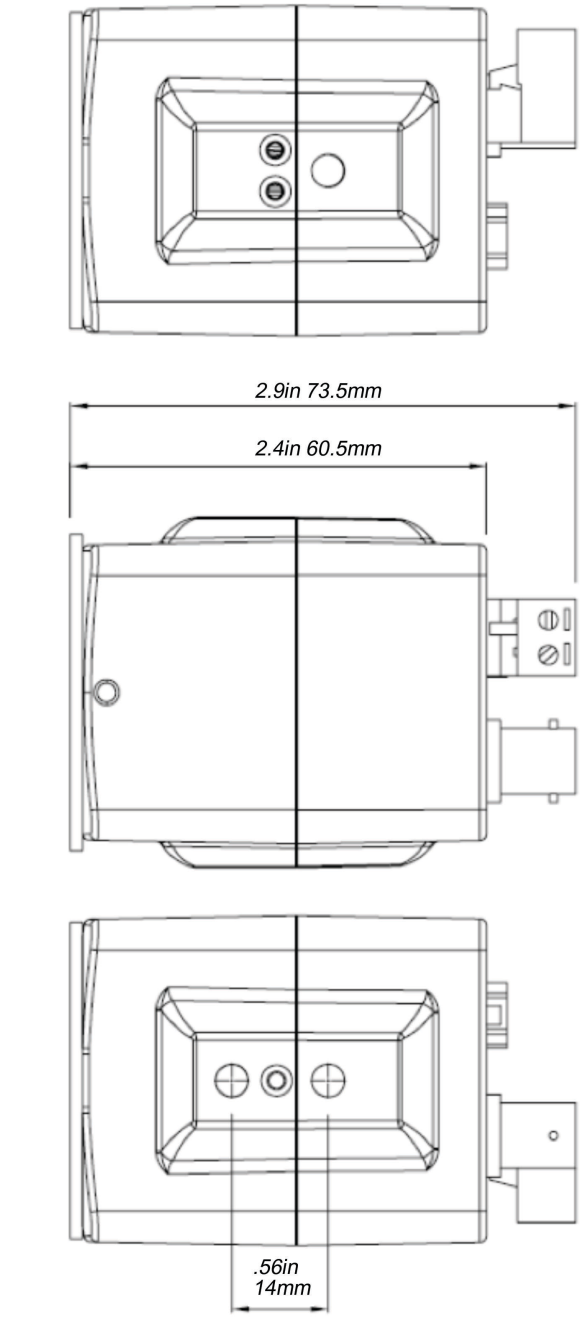
Press ◎ button for 2+ seconds to return to previous menu.

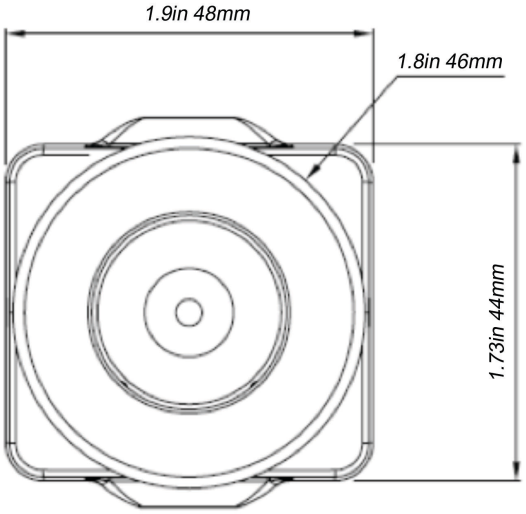
8. Specifications

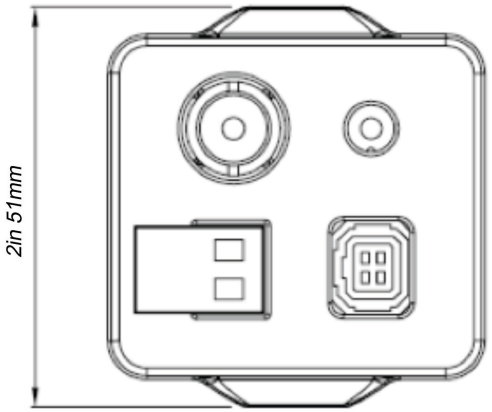
Model name	VTC-C770WS	
Image Device	1/3" CMY Color DPS SENSOR (Pixim Seawolf D8800C series)	
Effective Pixels	768(H) x 540(V)	
TV system	NTSC, 525lines / 2:1interlace	PAL, 625lines / 2:1interlace
Scan frequency.	59.94Hz(V), 15.734Khz(H)	50Hz(V), 15.625Khz(H)
Synchronization	Internal/Line lock (Default: Internal)	
H. Resolution	700TV Lines	
Sensitivity	0.0008Lux Class sensitivity (0.002Lux@ 2x Sense-up)	
S/N Ratio	52dB with AGC OFF at 50IRE	
White Balance	2000~11000ºK Automatic tracking	
WDR Mode	[Low/Middle/High/Custom (User adjustment)]	
Auto Iris Control	DC drive iris control. Level control is fixed internally.	
SENSE-UP	2X, 4X, 8X, 16X, 32X, 64X ESS	
Motion Detection	On/Off (4 Programmable Zone)	
D-PTZ	Up to X12 digital zoom	
FLIP	OFF / H-FLIP / V-FLIP / H/V-FLIP	
Privacy Zone	On/Off (6 Programmable Zone)	
Auto Iris Control	DC Drive Iris Control	
Flicker reduction	Yes (NTSC Japanese version only)	
OSD	Yes (Setup menu only)	
Video Output	VBS 1Vpp +/-10%, 75ohm	
Lens mount	CS mount	
Operating Power	24VAC (12V-28.8Vac) or 12VDC (10.5-30Vdc), 3Watts max	
Operating condition	14ºF - 122ºF (-10ºC - +50ºC) 85% RH. Max. non-condensing	
Dimension (W x H x L)	1.9in x 2in x 2.4in (48mm x 51mm x 60.5mm)	

● Design and specifications are subject to change for product improvements without prior notice.

9. Dimensional Drawings







Other Great VITEK® INDUSTRIAL VIDEO PRODUCTS, INC. Products

The New and Improved Xpress Dome PTZs

Xpress Dome shown in optional outdoor housing & sun shield

VT-PTZ18W & VT-PTZ36W

18X & 36X PTZ Camera with WDR

- WDR True Day/Night PTZ Cameras
- VT-PTZ18W - Built-in 4.1-73.8mm Lens with 18x Optical Zoom / 12x Digital Zoom
  VT-PTZ36W - Built-in 3.4-122.4mm Lens with 36x Optical Zoom / 12x Digital Zoom
- 550 TV Lines of Resolution
- Auto Protocol Detection
- 248 Presets programmed with view direction, zoom, BLC.
- 4 Patterns record and play back user preference of surveillance path up to 240° sec.
- 16 Scans, 1 Auto Pan: 8 speed steps from slow to medium panning with smooth Vector Scan.

Optional Accessories

VT-PTPLMT
Pole Mount Adapter

VT-PTPPMT
Parapet Roof Mount

VT-PTPDMT
Pedestal/Ceiling Mount

VT-PTCNMT
Corner Mount Adapter

VT-PTWMT
Wall Mount

Advertisement

VITEK LIMITED PRODUCT WARRANTY

VITEK products carry a three (3) year limited warranty. VITEK warrants to the purchaser that products manufactured by VITEK are free of any rightful claim of infringement or the like, and when used in the manner intended, will be free of defects in materials and workmanship for a period of three (3) years, or as otherwise stated above, from the date of purchase by the end user. This warranty is non-transferable and extends only to the original buyer or end user customer of a VITEK Authorized Reseller.

The product must have been used only for its intended purpose, and not been subjected to damage by misuse, willful or accidental damage, caused by excessive voltage or lightning.

The product must not have been tampered with in any way or the guarantee will be considered null and void.

This guarantee does not affect your statutory rights.

Contact your local VITEK Reseller should servicing become necessary.

VITEK makes no warranty or guarantee whatsoever with respect to products sold or purchased through unauthorized sales channels. Warranty support is available only if product is purchased through a VITEK Authorized Reseller.

Visit www.vitekcctv.com to register your product warranty and receive periodic updates.

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